

## A Report into Traffic Conditions on Albert Road, March 2021.

R J Edwards (Bollington Town Council), [REDACTED] (Transition Bollington)

### Resume

This short note describes a study undertaken by Transition Bollington and Bollington Town Council to assess the levels of traffic flows, vehicle speeds and air quality during school set down and pick up times compared to those between 1200 and 1300.

The key findings were:

1. During school set down and pick up there were over an extra 100 car movements compared to the 1200 – 1300.
2. During school drop off and pick up 81% and 66% of all vehicles were travelling at < 25mph. The daily average speed of all vehicles on Albert Road was 24mph and over the 3 week data collection period only 8.3% of all vehicles exceeded 30 mph.
3. During set down and pick up times air quality was always good, with a few short spikes of poor air quality.

There is no compelling evidence for the introduction of a 20mph speed limit on Albert Road. The major issue is the very transient (15 to 20 minutes) congestion during set down and pick up times which could have bring road safety issues for pedestrians. The optimum solution is to find ways to encourage more parents to walk their children to, and from school.

### Introduction

In December 2020 Cheshire East Council (CEC) passed a motion allowing residents to request 20 mph speed limits on residential streets where appropriate. A potential candidate in Bollington is Albert Road. Considered by some to be one of the busiest and most congested roads in Bollington, within a 300 metre stretch there are 3 schools; St. Gregory's, Dean Valley and Footprints Nursery, with approximately 350 children between them. In addition, there are several factories and small businesses, and approximately 90 residential properties, with more planned. Further, Albert Road is the main route to Bollington tip, all of which suggests that a 20mph speed limit would be merited. In addition, this could make the road safer for cyclists and pedestrians, particularly during school operating hours.

In early 2021 parents from one of the schools launched a petition calling for a permanent 20mph speed limit. Supported by Bollington Town Council (BTC), the petition attracted over 430 signatures and was broadly supported by residents living on Albert Road and the adjoining streets. Whilst this is a high level of support it is necessary to provide factual evidence in any argument for a 20 mph speed limit. This short report, which has been produced with the excellent and invaluable support of the Transition Bollington Mad About Power Group (MAP) provides such information.

## Methodology

Trained volunteers from MAP, BTC and the public manually counted the number of vehicle movement (cars, vans, lorries, motorcycles, and bicycles) passing the observer in both directions along Albert Road. Counts were made on Monday, Wednesday and Friday at 0830 to 0930, 1200 to 1300 and 1445 to 1545 from the 8<sup>th</sup> to the 26<sup>th</sup> of March. Some Saturday data was also collected for comparison. Volunteers stood at three consecutive stationary positions along Albert Road, moving every 15 minutes: (i) at the pathway entry to the fire station; (ii) in the vehicle entrance to SMC Euroclamp, opposite Greg Avenue; (iii) the car park at Focus Management Consultants. This allowed observers to maintain social distancing with passers-by and add some physical activity to keep warm. Allowing for walking time between stations and back to the start, this gave four consecutive 15 minute periods during which counting took place. Weather conditions varied from heavy rain to cool, with overcast skies.

Vehicle speed data was separately and continuously collected using the Speed Indication Device (SID). This is an interactive device which reacts to traffic speeds using inbuilt radar system. The SID measures and stores vehicle speeds, but cannot differentiate between a car, van or lorry. The SID was mounted on a lamp post opposite Dean Valley School and counted movements and speeds from vehicles approaching from the B5090.

Air quality was monitored continuously during the vehicle counting periods to better understand how air quality varied with time of day and motor vehicle traffic. The volunteer observers carried an Atmotube PRO air quality monitor and used a smartphone app to record the data. The Atmotube PRO generates an Air Quality Score (AQS) from 0 to 100 based on measurements (in parts per million) of particulate matter of different sizes (PM1.0, PM2.5 and PM10) and volatile organic compounds (VOCs), and records temperature and air pressure. The Atmotube is a personal device rather than a sensor used in science labs, and the manufacturers state the gas and particulate measurements are only accurate to +/- 15%. An average AQS for each 15-minute period in each hour for each of the 3 data collection sessions (see above) was calculated.

## Results

All Figures and Tables referred to in this Section may be found at the end of the report.

### (i) Vehicle Movement data

Figure 1 shows the average number of cars travelling along Albert Road for each 15 minute time period for each of the 3 data collection sessions (morning, lunch and afternoon). This shows that from 0845 to 0900, and 1515 to 1530, mean car movements were close to, or exceed 80. The lunchtime data consistently shows 22 to 30 cars per 15 minute period passing the observer.

Figure 2 shows the average number of vans travelling along Albert Road for each 15 minute period for each of the 3 data collection sessions. This shows that the number of vans using

Albert Road during each of the observation periods remained constant and was low in comparison to the number of cars.

Figure 3 shows the TOTAL number of lorries travelling along Albert Road for each 15 minute period for each of the 3 data collection sessions. There appears to be a tendency for more lorries to be using Albert Road during the lunchtime session than the other 2 periods.

Figure 4 shows the average difference in total vehicle movements between the morning and lunchtime and afternoon and lunchtime data collection periods, using lunchtime as a baseline for comparison. This clearly shows the excess number of vehicle movements during school set down and pick up. On average there were more than 100 excess car movements in the morning and afternoon sessions (of one hour) compared to the lunchtime session.

## (ii) Vehicle Speeds

Table 1 shows the cumulative number of vehicles (cars, vans and lorries) by speed class (e.g < 15mph) for each hour of the day over for the 3 weeks of data collection. Figures in bold show the greatest cumulative number of vehicles travelling at a particular speed for each hour. Moving to the right of Table 1 “Total” refers to the cumulative number of vehicles recorded during each hour over the 3 week data collection period. The 85<sup>th</sup> percentile speed refers to the maximum speed of 85% of vehicles recorded for a particular hour. The Voltage figure shows that the system was operating optimally over the 3 weeks.

Reference to Table 1 shows that between 0800 and 0900 390 vehicles were travelling at < 15 mph, whilst 213 vehicles were travelling at 25 – 30 mph. Between 1400 and 1500 354 vehicles were travelling at < 15mph, whilst 296 vehicles were travelling at 25 – 30 mph. It should be remembered that the SID data includes weekends, when it might be reasonably expected that congestion was less than during the week, which may slightly skew the data to show more vehicles travelling at the higher speeds.

At school drop-off and pick up times 81% and 66%, respectively, of all vehicles were travelling at 25mph or less. This compares to 64% at 1200- 1300. The 85<sup>th</sup> percentile speed was 27.2 mph which is below the level at which police consider that a reduction in the local speed limit should be enacted. Over the 3 week period 8.3% of all vehicles exceeded the 30mph limit by 10% or more.

Figure 5 shows the cumulative vehicle counts by speed range over the 3-week period. Blue represents vehicle movements before midday and pink after midday. This confirms the previous observation that most vehicles travelled at 25mph or less. Figure 6 gives the average speed of all vehicles per hour for the data collection period, which shows that the average speed was always less than 24 mph.

## (iii) Air Quality

- Air quality during the traffic counting sessions was almost always good – 81 or above on the Atmotube 0-100 scale.
- There were a few periods of ‘moderate’ or ‘acceptable’ (61 to 80) air quality.

- There were no 15-minute periods in which the average AQS score indicated 'polluted' air (41 to 60), although there were occasional 'spikes' reaching as low as 60 for only 1 or 2 minutes. These resolved quickly.
- Air quality was consistently better in the lunchtime slot and all day Saturday, matching much lower overall traffic volumes at midday and on Saturday.
- Air quality seems to be slightly worse in the 8.30 to 9.30am slot than the 2.30 to 3.30pm slot – but on two rainy mornings the air quality monitor was not used so we don't have enough data to be sure of this.
- We have some limited background air quality data during school set down and pick up in June, July, September, November (without traffic counts). The picture is broadly good although there were two 15-minute periods in summer morning set down in which the average AQS score was 'polluted' (41 to 60). The cause is not clear – other factors such as wind and temperature may have an impact on air quality in addition to traffic.

## Discussion

The aim of this study was to gather information which could support the introduction of a 20 mph speed limit on Albert Road. The data collected was number of vehicles using Albert Road at school set down (08:30 to 09:30) and pick up (14:45 to 15:45), and between 1200 to 1300, which acted as a control period. Air quality data was also collected at these times whilst vehicle speed was continually recorded for 3 weeks.

Car movements showed clear peak periods during drop off and pick up times when, compared to the control (1200-1300) period, there was, on average, nearly 60 excess cars moving on the road 08:45 to 09:00 and 15:15 to 15:30 (Figure 4). Excess car movements are the difference between the number of movements counted in a 15 minute period during the morning or afternoon compared to the same 15 time period at lunchtime. This provides a clearer impression of the number of cars which are conveying children to and from the schools. All these cars were, at one point parked on the road as parents escorted their children to the school premises. There were very few examples of cars being parked with engines idling.

Analysis of the data in Table 1 shows that 81% of all vehicles travelled at, or below 25mph between 0800 and 0900 and 66% and 75% at 25mph, or less between 1400 and 15:00 and 15:00 to 16:00 respectively. Furthermore, the recorded average speed was 24mph or less, whereas during set down and pick up average speed was close to 20mph. This is unsurprising as the congestion caused by parked cars and the increase in pedestrians meant cars could only travel at slow speeds. The 85<sup>th</sup> percentile speed of 27.2 mph. The speed data suggests that gaining a permanent 20mph speed limit for Albert Road would be difficult. Despite these observations there is still an appreciable volume of traffic moving on Albert Road at 30mph during the set down and pick up periods. It may be possible to campaign for speed restriction measures, e.g. speed ramps, to be installed outside the schools, but the major issues for Albert Road during school set down and pick up are those of congestion, poor parking and pedestrian safety.

All observers commented upon the severe congestion during set down and pick up, caused mainly by cars parked in the road and so reducing the usable road width, or, occasionally, cars being parked on the pavement, thus reducing the safe space for pedestrians. Cars were also parked on road corners, such as Greg Avenue, so reducing visibility and making it hazardous for residents to turn onto Albert Road. The congestion was exacerbated if a large van or lorry was moving around the schools, which usually resulted in grid-lock. While the number of lorries moving past the schools during the set down and pick up times was small, their impact on traffic flow was large, and further exacerbated by cars parked on the road. What was also noticeable was the number of parents and children who were obliged to step into the road to get past parked cars. This was either to maintain social distancing, or because cars parked on the pavements made it impossible for parents with child buggies to pass. On a more positive note, the air quality was mainly good. This may be due, in part, to the observation that cars were parked without engines running as children were dropped – off or collected.

So what might be the solutions? Currently MAP is investigating the potential for safe walking routes to schools on Albert Road. A major obstacle for a safe route for the Albert Road schools is that walking or cycling via Moss Brow is hazardous and, potentially unsafe. In addition, there are no footpaths that can be used to access Albert Road.

Congestion and, hence, pedestrian safety could be addressed by actions undertaken by BTC or CEC. It may be possible to find dedicated car parking areas for set down and pick up. There are a few possibilities, the old GPO site opposite Dean Valley School or, if the companies were amenable, the car parks at SMC Euroclamp and Slater Harrison. The difficulty here is that there still may be insufficient space, and the number of cars using Albert Road during those times would not be reduced.

A more pragmatic approach could be to close Albert Road to all vehicles, except those owned by residents or local workers from, say, 0800 to 0930 and 1430 to 1600, or similar, time periods on school days. A one day trial had been planned for September 2020 with the schools, Police and Fire Service being supportive. Local businesses were going to be approached but the project had to be shelved because of the COVID- 19 lockdown. It is feasible to run this project later this year, but the problem would be that this would simply displace parked vehicles onto Wellington Road causing even more congestion.

What is quite clear is that the root cause of the problems on Albert Road relate to the volume, and not the speed of traffic. The solution is NOT to provide car parks as that does NOT reduce the number of vehicles. It is necessary to find a way of discouraging parents, grandparents or friends using vehicles to bring and collect children. Before making any major policy decisions it would be important to find out the final destination of parents who drop off or collect children. Any action which prohibited vehicle use would significantly impact on the livelihood of those parents who include the school run as part of their journey to, and from work. The issue of reducing vehicle numbers on Bollington's roads will be addressed by Bollington 2030 and the Transport and Travel Working Group. Any solution must not penalise or inhibit those families who NEED to use the car for the school run on a regular basis, nor should it adversely affect residents and local businesses.

In conclusion there is no compelling evidence to support the introduction of a 20 mph speed limit on Albert Road. There is compelling evidence that there is a congestion problem during school set down and pick up. This, rather than vehicle speed give rise to safety issues, such as children and parents being obliged to walk in the road to get around vehicles parked on the pavement. It also discourages walking and cycling to school. The solution lies in persuading parents not to drive their children to, and from school, unless there is a truly valid reason.

### **Acknowledgements**

Bollington Town Council would like to thank the members of MAP, Transition Bollington and the members of the public who supported this activity.

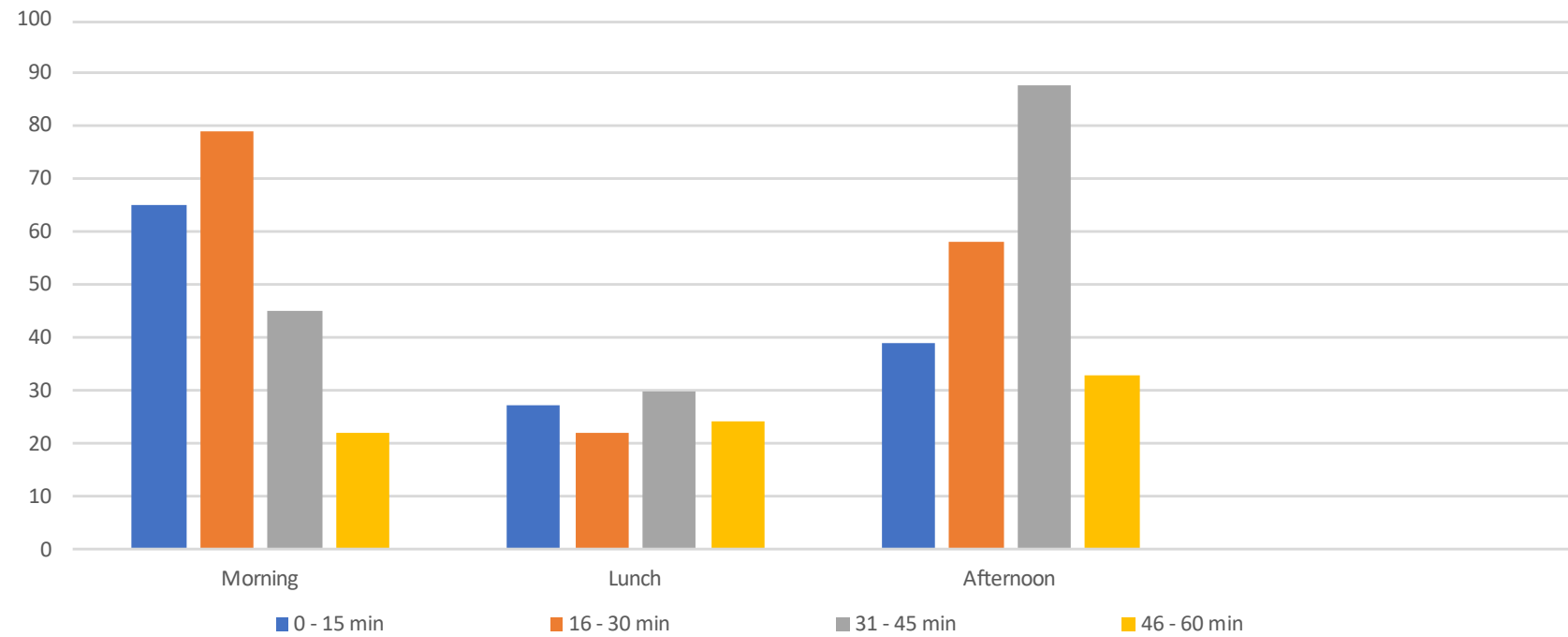


Figure 1. Average Number of Car Movements on Albert Road.

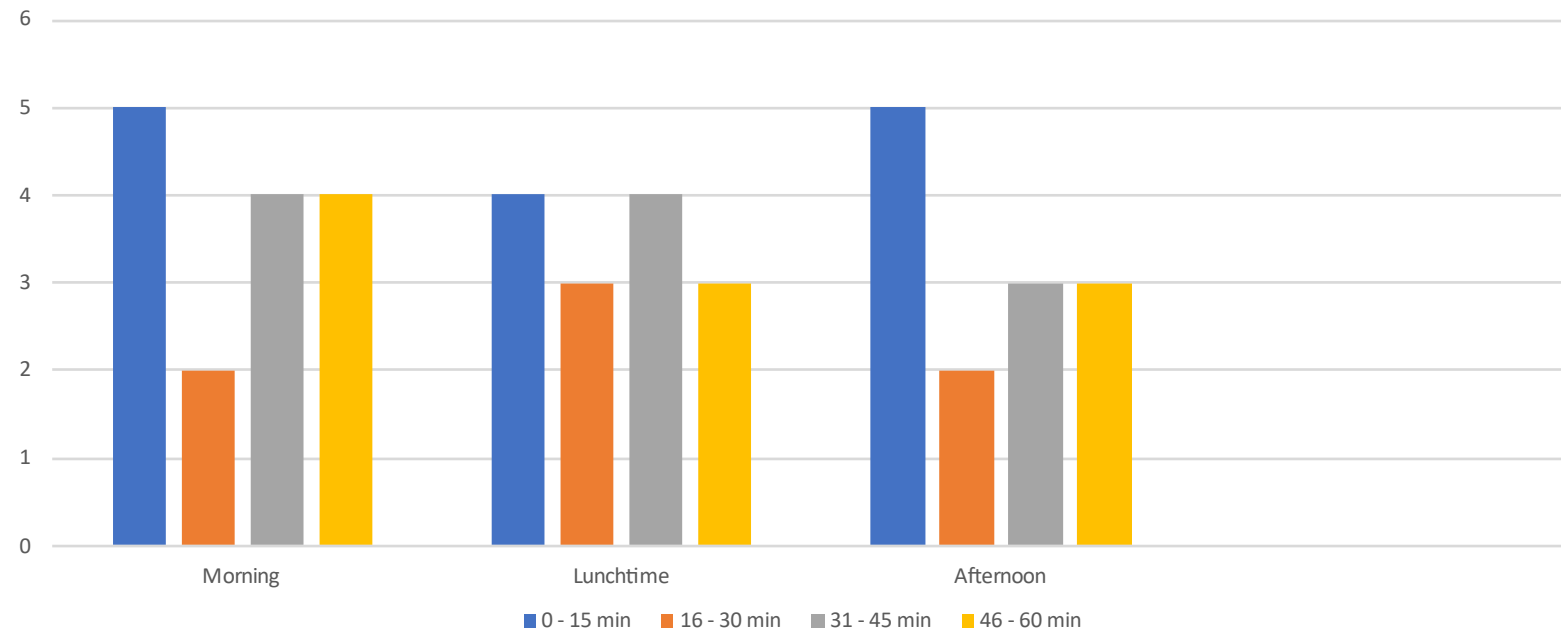


Figure 2. Average Number of Van Movements on Albert Road.



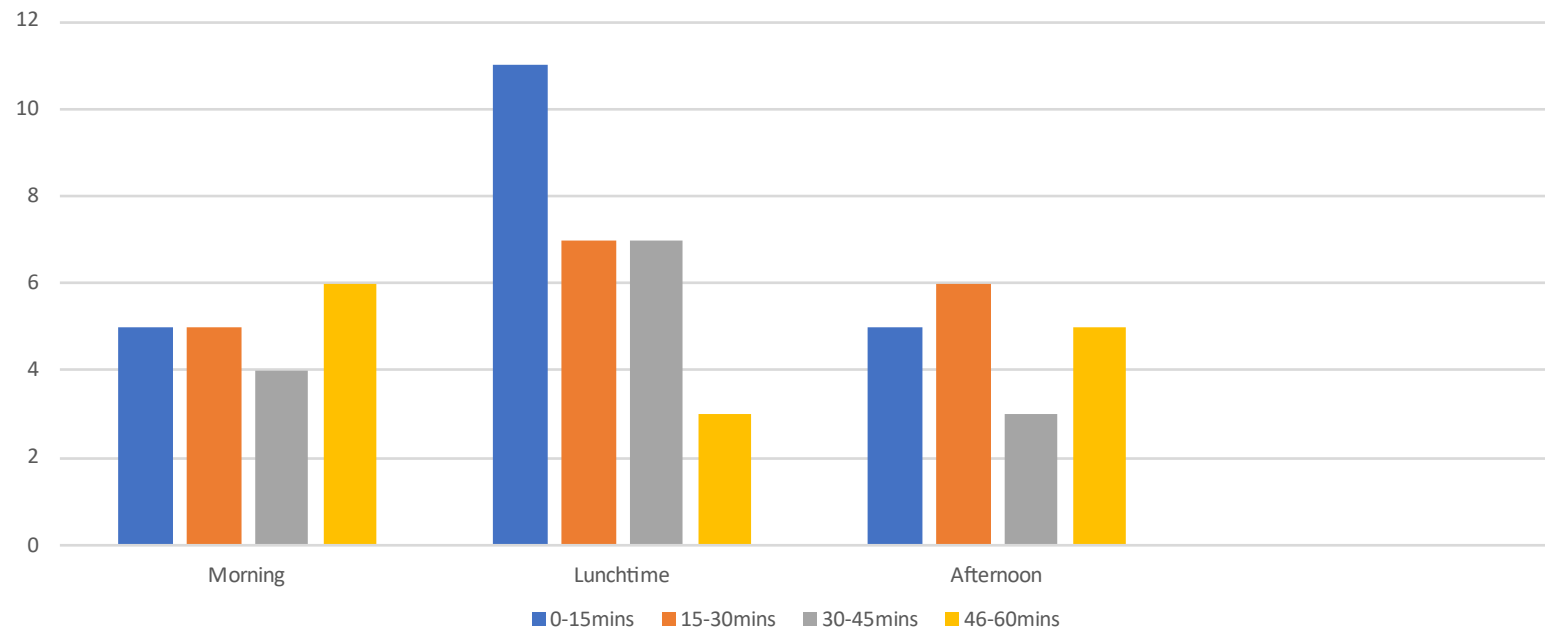


Figure 3. Total Number of Lorry Movements on Albert Road Over the 3 Week Data Collection.

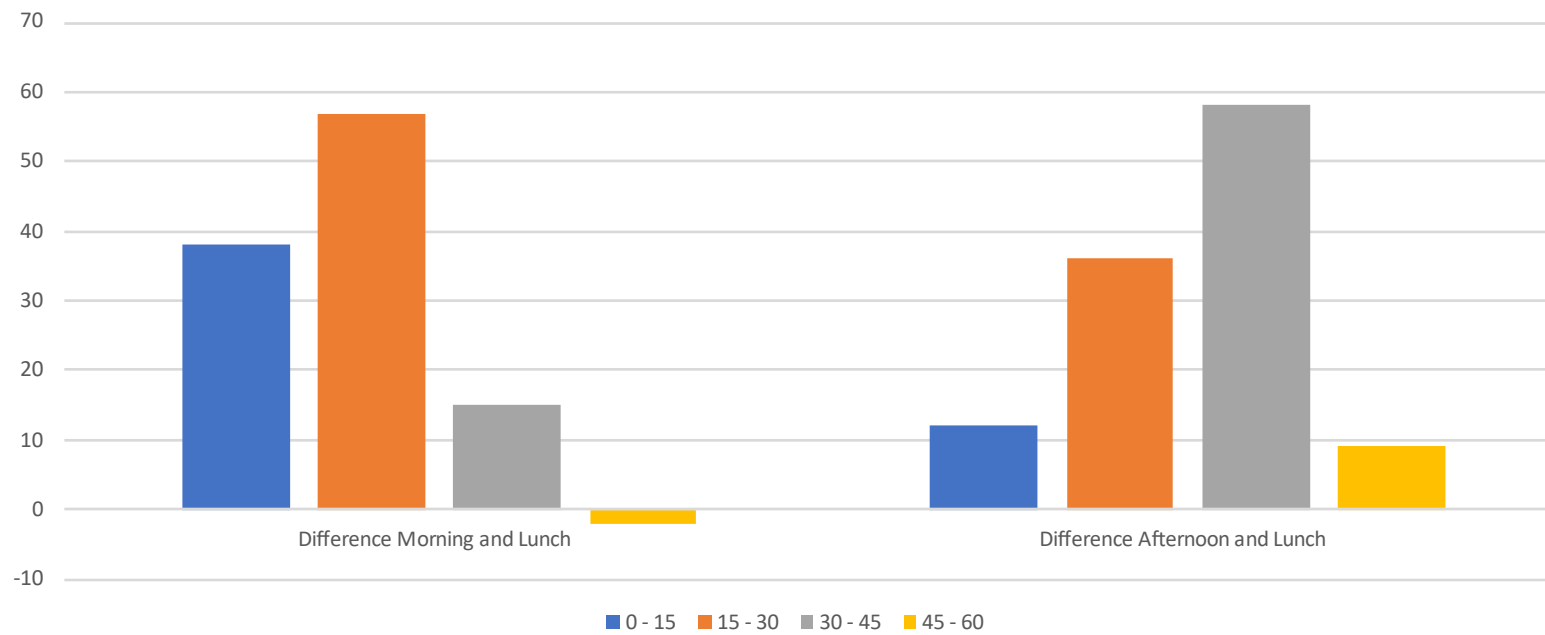


Figure 4. Average Excess Vehicle Movements in Morning and Afternoon Set Down and Pick Up Compared to Lunch Time.

Sites: Albert Road looking twrd Well Rd  
 Dates: Wed Mar 3 2021 - Tue Mar 23 2021  
 Directions: Eastbound

|          | Vehicle Speed Classes (Mph) |          |          |          |          |          |          |          |          |          |          |          |       |      | Total | 85th Percentile | Average Voltage |
|----------|-----------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------|------|-------|-----------------|-----------------|
|          | <15                         | 15<br>20 | 20<br>25 | 25<br>30 | 30<br>35 | 35<br>40 | 40<br>45 | 45<br>50 | 50<br>55 | 55<br>60 | 60<br>65 | 65<br>70 | >70   |      |       |                 |                 |
| 00:00    | 36                          | 10       | 3        | 4        | 0        | 1        | 0        | 0        | 0        | 0        | 0        | 0        | 0     | 54   | 17.8  | 10.77V          |                 |
| 01:00    | 42                          | 9        | 5        | 2        | 2        | 2        | 0        | 0        | 0        | 0        | 0        | 0        | 0     | 62   | 19.8  | 10.66V          |                 |
| 02:00    | 49                          | 8        | 1        | 1        | 0        | 0        | 1        | 0        | 0        | 1        | 1        | 0        | 0     | 62   | 14.6  | 10.75V          |                 |
| 03:00    | 45                          | 14       | 3        | 3        | 3        | 3        | 0        | 0        | 0        | 0        | 0        | 0        | 0     | 71   | 20.7  | 10.75V          |                 |
| 04:00    | 46                          | 14       | 7        | 1        | 1        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0     | 69   | 18.3  | 10.61V          |                 |
| 05:00    | 49                          | 18       | 27       | 53       | 16       | 2        | 1        | 0        | 0        | 0        | 0        | 0        | 0     | 166  | 28.3  | 10.64V          |                 |
| 06:00    | 40                          | 54       | 72       | 81       | 43       | 16       | 4        | 0        | 0        | 0        | 0        | 0        | 0     | 310  | 30.5  | 10.61V          |                 |
| 07:00    | 170                         | 198      | 353      | 322      | 52       | 7        | 2        | 0        | 0        | 0        | 0        | 0        | 0     | 1104 | 26.7  | 10.38V          |                 |
| 08:00    | 390                         | 364      | 373      | 213      | 48       | 6        | 0        | 0        | 0        | 0        | 0        | 0        | 0     | 1394 | 25.0  | 10.30V          |                 |
| 09:00    | 154                         | 190      | 334      | 314      | 80       | 10       | 1        | 0        | 0        | 0        | 0        | 0        | 0     | 1083 | 27.5  | 10.29V          |                 |
| 10:00    | 181                         | 208      | 423      | 433      | 111      | 10       | 1        | 0        | 1        | 0        | 0        | 0        | 0     | 1368 | 27.6  | 10.62V          |                 |
| 11:00    | 218                         | 224      | 462      | 381      | 98       | 18       | 1        | 0        | 0        | 0        | 0        | 0        | 0     | 1402 | 27.3  | 10.55V          |                 |
| 12:00    | 238                         | 251      | 488      | 422      | 92       | 10       | 1        | 0        | 0        | 0        | 0        | 0        | 0     | 1502 | 26.9  | 10.37V          |                 |
| 13:00    | 208                         | 209      | 388      | 401      | 108      | 17       | 3        | 0        | 0        | 0        | 0        | 0        | 0     | 1334 | 27.6  | 10.40V          |                 |
| 14:00    | 274                         | 269      | 472      | 415      | 91       | 8        | 0        | 0        | 0        | 0        | 0        | 0        | 0     | 1529 | 26.9  | 10.27V          |                 |
| 15:00    | 354                         | 315      | 365      | 296      | 55       | 6        | 0        | 0        | 0        | 0        | 0        | 0        | 0     | 1391 | 26.1  | 10.29V          |                 |
| 16:00    | 212                         | 222      | 351      | 308      | 78       | 4        | 0        | 0        | 0        | 0        | 0        | 0        | 0     | 1175 | 26.9  | 10.36V          |                 |
| 17:00    | 245                         | 212      | 360      | 336      | 107      | 10       | 1        | 0        | 0        | 0        | 0        | 0        | 0     | 1271 | 27.5  | 10.76V          |                 |
| 18:00    | 89                          | 99       | 148      | 152      | 75       | 10       | 2        | 0        | 0        | 0        | 0        | 0        | 0     | 575  | 29.0  | 10.68V          |                 |
| 19:00    | 50                          | 54       | 95       | 89       | 42       | 19       | 7        | 0        | 0        | 0        | 0        | 0        | 0     | 356  | 30.3  | 10.77V          |                 |
| 20:00    | 34                          | 26       | 52       | 46       | 37       | 9        | 2        | 2        | 0        | 0        | 0        | 0        | 0     | 210  | 31.6  | 10.75V          |                 |
| 21:00    | 22                          | 17       | 18       | 29       | 15       | 3        | 0        | 1        | 1        | 0        | 0        | 0        | 0     | 106  | 30.1  | 10.78V          |                 |
| 22:00    | 14                          | 11       | 10       | 14       | 6        | 2        | 0        | 1        | 0        | 0        | 0        | 0        | 0     | 58   | 29.1  | 10.75V          |                 |
| 23:00    | 29                          | 5        | 5        | 13       | 9        | 1        | 0        | 0        | 0        | 0        | 0        | 0        | 0     | 62   | 29.2  | 10.77V          |                 |
| AM Total | 1420                        | 1311     | 2063     | 1808     | 454      | 75       | 11       | 0        | 1        | 1        | 1        | 0        | 0     |      |       |                 |                 |
| PM Total | 1769                        | 1690     | 2752     | 2521     | 715      | 99       | 16       | 4        | 3        | 0        | 0        | 0        | 0     |      |       |                 |                 |
| Total    | 3189                        | 3001     | 4815     | 4329     | 1169     | 174      | 27       | 4        | 4        | 1        | 1        | 0        | 0     |      |       |                 |                 |
| Percent  | 19.08%                      | 17.96%   | 28.81%   | 25.90%   | 6.99%    | 1.04%    | 0.16%    | 0.02%    | 0.02%    | 0.01%    | 0.01%    | 0.00%    | 0.00% |      |       |                 |                 |

Total Vehicles : 16714

30th Percentile : 17.2 MPH  
 50th Percentile : 21.5 MPH  
 85th Percentile : 27.2 MPH  
 95th Percentile : 30.4 MPH

Average Speed : 21.4 MPH  
 Highest Speed : 60.0 MPH

Total Over Speed Limit : 5.8 % (972 / 16714)

1

Table 1. Cumulative Vehicle Numbers by Speed Class for Each Hour over the 3 Week Recording Period.

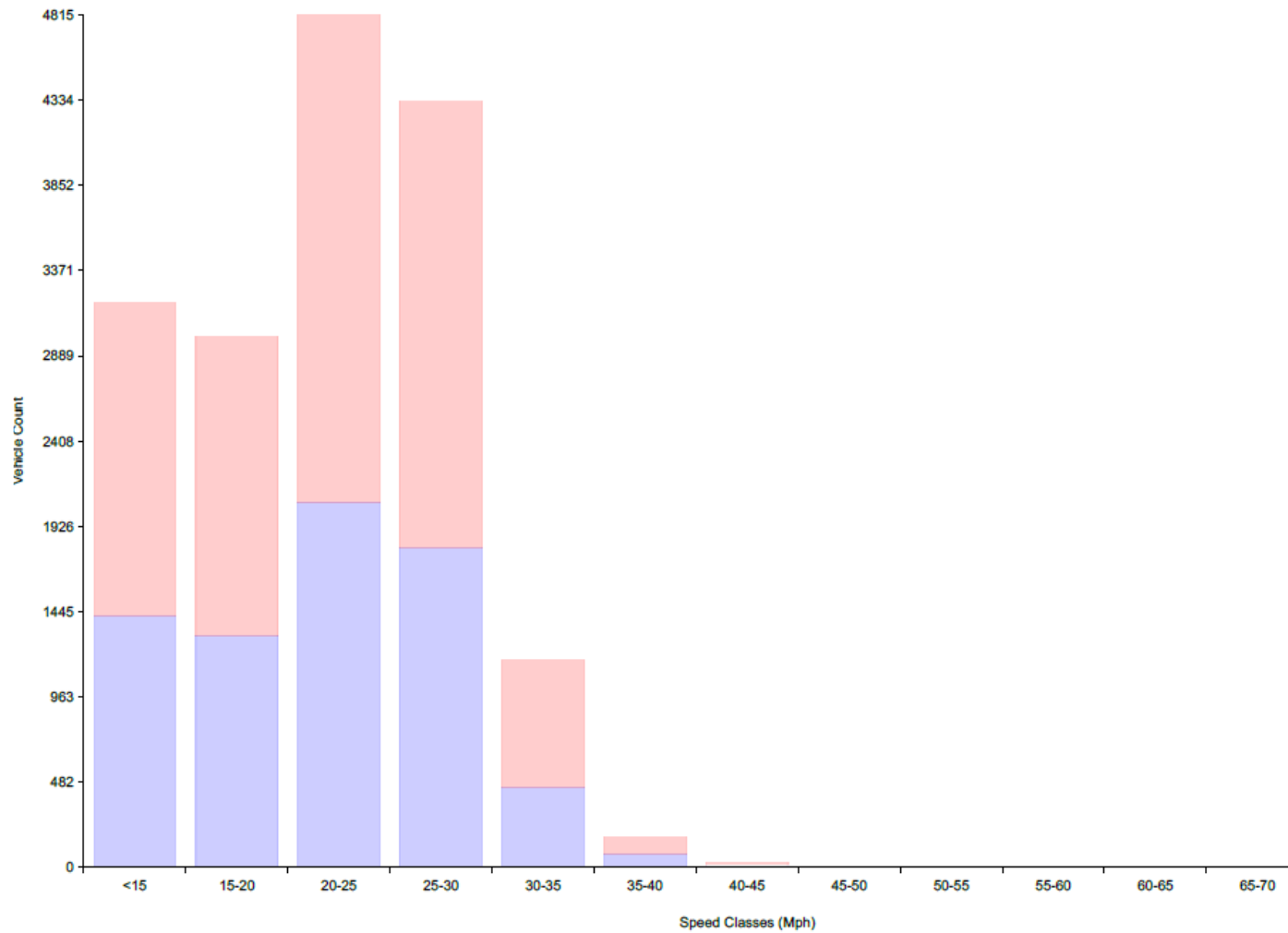


Figure 5. Cumulative Vehicle Counts by Speed Class for Mid – night to Mid – day (blue) ad Mid – day to Mid-Night (pink).

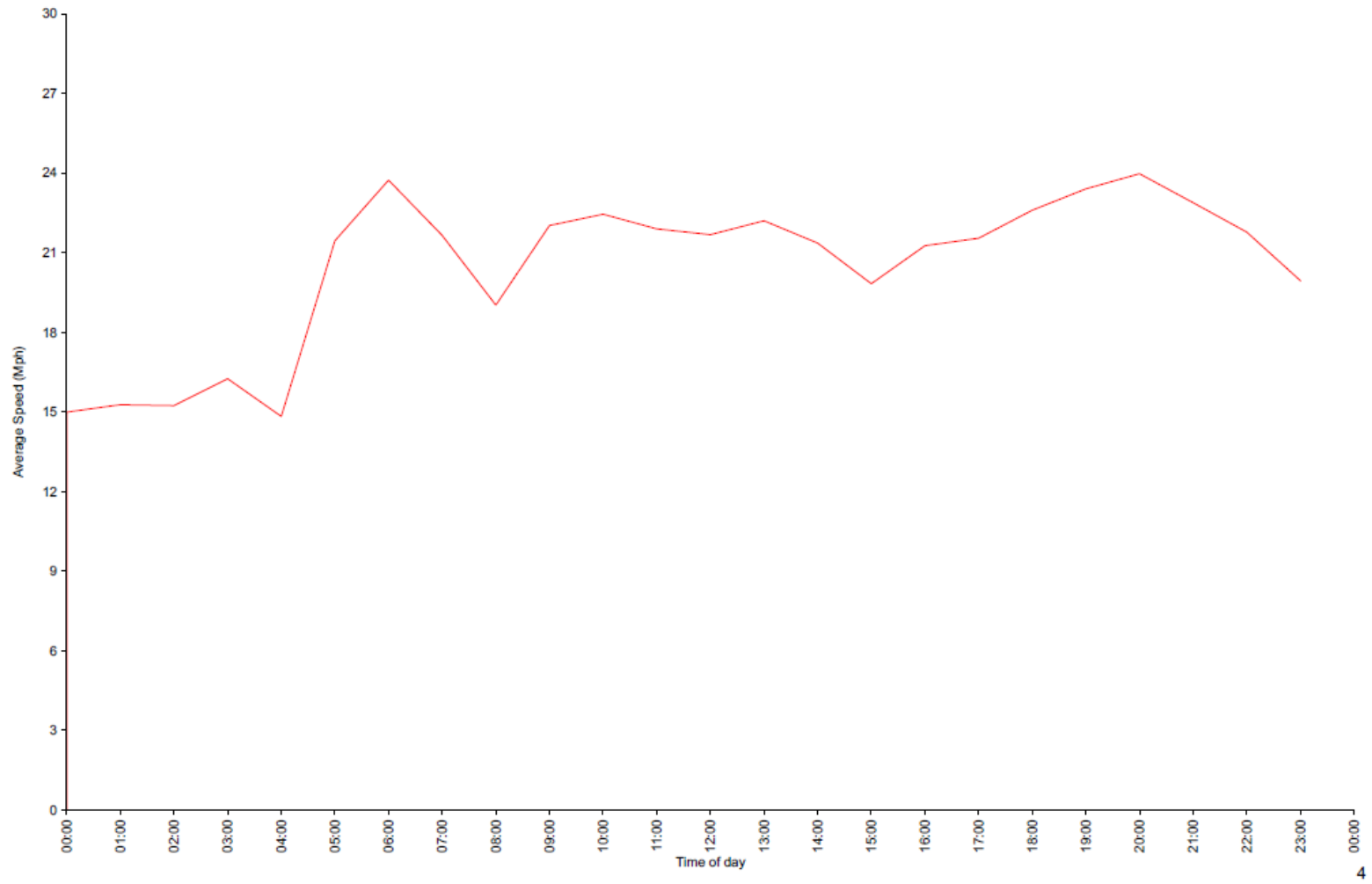


Figure 6. Average Vehicle Speed per Hour Over the 3 Week Recording Period.